538,615

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization

International Bureau



(43) International Publication Date 1 July 2004 (01.07.2004)

PCT

(10) International Publication Number WO 2004/055481 A1

(51) International Patent Classification7: H01F 7/02

G01D 5/16,

(21) International Application Number:

PCT/IB2003/005990

(22) International Filing Date:

10 December 2003 (10.12.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 02102796.6

18 December 2002 (18.12.2002)

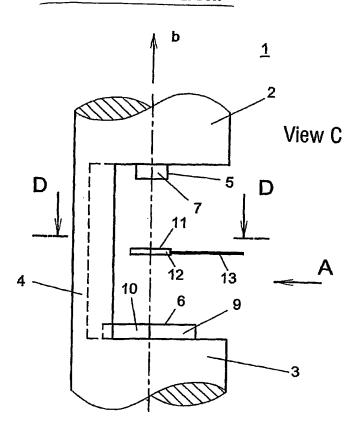
(71) Applicant (for DE only): PHILIPS INTELLECTUAL PROPERTY & STANDARDS GMBH [DE/DE]; Steindamm 94, 20099 Hamburg (DE).

(71) Applicant (for all designated States except DE, US): KONINKLIJKE PHILIPS ELECTRONICS N.V. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

- (72) Inventor; and
- (75) Inventor/Applicant (for US only): BUTZMANN, Stefan [DE/DE]; c/o Philips Intellectual Property & Standards GmbH, Weisshausstr. 2, 52066 Aachen (DE).
- (74) Agent: MEYER, Michael; Philips Intellectual Property & Standards GmbH, Weisshausstr. 2, 52066 Aachen (DE).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),

[Continued on next page]

(54) Title: MAGNETIC POSITION SENSOR



(57) Abstract: What is described is a configuration for determining the position of a body on an at least largely linear motion coordinate, along which two magnetic configurations are disposed, each equipped with at least one pair of magnetic north and south poles, and disposed between the magnetic configurations is a magnetoresistive angle-sensor configuration, which is set up to measure the direction of a resultant magnetic field spanned by the magnetic configurations and extending between them in a measurement plane relative to a spatial reference direction lying in this measurement plane. The motion coordinate is aligned at least largely at right angles to the measurement plane of the magnetoresistive angle-sensor configuration, and magnetic axes of the two magnetic configurations extend essentially parallel to the measurement plane and projections of these magnetic axes onto the measurement plane are aligned to be offset by predetermined angles relative to one another. At least a first of the magnetic configurations is connected to the body and disposed to be mobile, together with the latter, relative to the magnetoresistive angle-sensor configuration along the motion coordinate. As a result, a configuration for determining the position of a body with the aid of an angle sensor in cases of an at least largely linear motion is created.

WO 2004/055481 A1 |||